

ABSTRACT

A monitoring system includes one or more monitoring devices, positioned in sewer manholes, storm drains, etc., and a remote monitoring station that communicates wirelessly therewith. The monitoring device may be an integrated unit, including sensors, a two-way telemetry unit, a power supply, a processor, and supporting hardware, all located in an enclosed, waterproof housing. The monitoring device is placed within a manhole cavity to obtain depth (e.g., water level) measurements and report the measurements back to the remote monitoring station, which analyzes the data and responds to alert messages when a dangerous water level is detected. The sample and reporting rates of the device, as well as the water level threshold values, may be remotely programmable via commands transmitted from the remote monitoring station. An additional sensor may monitor the manhole cover for security purposes. Additional external monitoring instruments may be connected to the device, which relays data therefrom to the remote monitoring station.